EVALUATION OF WASTEWATER TREATMENT AND SCALE-UP BY *Aphanothece microscopica Nägeli* IN BATCH REACTOR

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This work has a purpose the evaluation of *Aphanothece*'s growth in rice parboilization effluent in batch reactor with variable temperature and sacle-up study of astewater treatment. *Aphanothece microscopica Nägeli* is a cianobacteria that occurs in the esturies of Rio Grande, Brazil (De Lourenzo, 1995). A description of the temperature field is important because the reaction rate is in most instantes a strong function of the temperature (Bartholomew & Hecker, 1994). Although the cianobacterias show photosynthesis as the main metabolical way, some strains are able to provide enough energy from organic compounds to guarantee their growth in the dark (FAY, 1983). Experiments were set up in batch reator, constant stirring, darkness, using *Aphanothece* cultures at log phase, these cultures were stored in standard medium BGN (Ripka *et al*, 1979), with variable temperature (25 and 35^{o}C). It was used a batch reator since the choise of small scale system contributes significantly to a successful scale-up (Katzer *et al*, 2001). The rice parboilization effluent was characterised through pH, total nitrogen (TN), chemical oxigen demand (COD), phosphorus, total sugars and total volatile acids, following Standard Methods, 1998. It was created datas on the growth kinetics, specific growth rate and generation time (Bailey & Ollis, 1986), as well as the removal of nitrogen %TN, organic matter %COD, specific rate of substrate consumption and yield (Contreras *et al*, 2000). Therefore, it follows results was scale-up study CSTR (Continuos Flow Stirred Tank) to nitrogen and COD removal (Charles, 1985). In experimental conditions it follows that *Aphanothece* can use in scale-up wastewater treatment.

Key words: *Aphanothece*, wastewater treatment, scale-up

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